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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/706,124

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Kaoru Okumura

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EXAMINER

LOVEL, KIMBERLY M

ART UNIT

PAPER NUMBER

2167

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/706,124	Applicant(s) OKUMURA, KAORU	
	Examiner Kimberly Lovel	Art Unit 2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/12/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-19 are rejected.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 12 March 2004 was filed after the mailing date of the application on 12 November 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 1, item 195. Page 9, line 10 of the applicant's specification labels the "output peripheral interface" as item 190 instead of as 195, however, 190 is the label used for the "video interface." Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

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examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim recites "a search result string." The applicant's specification does not mention refining the search or searching based on a previous search. Therefore, to allow for compact prosecution, the examiner considers "a search result string" to represent refining the previous search.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 12, 14, 16 and 18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 12, 14, 16 and 18 recite "... wherein the method steps are executed as program instruction embedded on a computer readable medium."

According to page 6, lines 17-22 of the applicant's specification, "a communication media typically embodies computer readable instructions ... in a modulated data signal such as a carrier wave." According to Annex IV of the "Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility" that was signed on Oct 26 and posted at <http://www.uspto.gov/web/offices/pac/dapp/ogsheet.html> , a carrier wave is considered to be nonstatutory subject matter because it does not fall into any of the four statutory categories of invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 13-16 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by US PGPub 2004/0078366 to Crooks et al (hereafter Crooks et al).

Referring to claim 13, Crooks et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving a string that incorporates a plurality of characters separated by at least one hyphen (see [0022], lines 12-13 and [0024], lines 48-49 – the system receives an input string from a user; an example input string contains the alpha string “Z-pac”);

removing the at least one hyphen to form at least one additional term (see [0024], lines 48-50 – the term “Zpac” is formed after eliminating the hyphen from the term “Z-pac”); and

providing said at least one additional term to the searching process (see [0025], lines 3-5 – the normalizer performs the step of removing the hyphen which results in providing an additional term for the search process).

Referring to claim 14, Crooks et al disclose the method of claim 13, wherein the method steps are executed as program instruction embedded on a computer readable medium (see [0018]).

Referring to claim 15, Crooks et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving a string that incorporates a plurality of characters separated by at least one hyphen (see [0022], lines 12-13 and [0024], lines 50-54 – the system receives an input string from a user; an example input string contains the alpha string “vibra-tabs”);

replacing the hyphen with a space to form at least one additional term (see [0024], lines 50-54 – the term “vibra tabs” is formed after the hyphen is removed from the term “vibra-tabs”); and

providing said at least one additional term to the search engine (see [0025], lines 3-5 – the normalizer performs the step of removing the hyphen which results in providing an additional term for the search process).

Referring to claim 16, Crooks et al disclose the method of claim 15, wherein the method steps are executed as program instruction embedded on a computer readable medium (see [0018]).

Referring to claim 19, Crooks et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving a string that incorporates a plurality of terms separated by a space or a hyphen (see [0022], lines 12-13 and [0024], lines 50-54 – the system receives an input string from a user that *incorporates a plurality of terms separated by a hyphen*; an example input string contains the alpha string “vibra-tabs”);

generating at least one additional term by performing an operation selected from the group consisting of removing a space between the plurality of terms, removing a hyphen between the plurality of terms, replacing a space between the plurality of terms with a hyphen, and replacing a hyphen between the plurality of terms with a space (see [0024], lines 50-54 – *removing a hyphen between a plurality of terms* is considered to represent the selected operation; the term “vibra tabs” is formed after the hyphen is removed from the term “vibra-tabs”); and

providing said at least one additional term to the searching process (see [0025], lines 3-5 – the normalizer performs the step of removing the hyphen which results in providing an additional term for the search process).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,027,987 to Franz et al (hereafter Franz et al) in view of US Patent No. 6,393,399 to Even (hereafter Even).

Referring to claim 1, Franz et al disclose a method for receiving a voice search query and enhancing the query to provide additional terms to a search engine. In particular, Franz et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving a string that incorporates a plurality of characters separated by at least one space (see column 5, lines 52-53 and column 6, lines 28-29 – a voice query is considered to represent *a string that incorporates a plurality of characters*; in the example voice query “White House,” the characters in the word “White” and the characters in the word “House” are *separated by at least one space*);

concatenating the plurality of characters to form at least one additional term (see column 8, lines 51-66 – Franz et al disclose providing the search query additional terms in the form of compound words); and

providing said at least one additional term to the search process (see column 6, lines 62-66 and column 7, lines 58-61 – the hypothesis list is considered to represent the *additional terms*; the hypothesis list is utilized to construct the search query).

However, while Franz et al disclose the concept of using compound words to expand the search query, Franz et al fail to explicitly teach the limitation of concatenating the plurality of characters to form at least one additional term. Even provides a method for analyzing a text string and using a compounder process to provide compound words (see abstract, column 1, lines 55-59 and Fig 2). In particular, Even discloses concatenating the plurality of characters to form at least one additional term (see column 4, lines 18-26 – in the example, the characters are “Wahl,” “Kampf” and “Geschichten;” concatenating the characters forms the additional term “WahlfKampfGeschichten”).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Even’s compounder process as a subcomponent to Franz et al’s method for providing additional terms to a searching process. One would have been motivated to do so since Franz et al’s method provides the capability of using compound words to perform or refine a search (Franz et al: see column 8, lines 51-53) and also since using compound words instead of each word separately increases the chances of providing better search results (Franz et al: see column 8, lines 53-57).

Referring to claim 2, the combination of Franz et al and Even (hereafter Franz/Even) discloses the method of claim 1, wherein,

receiving a string comprises receiving a string that incorporates a first set of characters separated by a space from a second set of characters (Even: see column 4, lines 18-26 – in the example, the characters are “Wahl,” “Kampf” and “Geschichten”); and

concatenating comprises concatenating the first and second sets of characters (Even: see column 4, lines 18-26 – concatenating the characters forms the additional term “WahlKampfGeschichten”).

Referring to claim 3, Franz/Even discloses the method of claim 2, wherein the first and second sets of characters are each a single character (Even: see column 4, lines 18-26 – there is no limitation stating that each word has to be formed by a specific number of characters; the compounder process concatenates the words no matter how many characters exist in a word).

Referring to claim 4, Franz/Even discloses the method of claim 1, and further comprising preprocessing the string (Franz et al: see column 7, lines 6-9 – removing noise words from the query is considered to represent *preprocessing the string*).

Referring to claim 5, Franz/Even discloses the method of claim 4, wherein preprocessing includes removing at least one extraneous character from the string (see Franz et al: see column 7, lines 6-9 – removing noise words from the query is considered to represent *removing at least one extraneous character from the string*).

Referring to claim 6, Franz/Even discloses the method of claim 1, and further comprising suppressing at least one additional term (Franz et al: see column 6, lines 53-56 - according to page 14, lines 13-17 of the applicant's specification, “suppression may

be applied in regard to the level or number of words or characters that can be concatenated;" the query restraint parameters the number of hypotheses to be considered and the total number of words to be included in a query are considered to represent suppressing the *at least one additional term*).

Referring to claim 7, Franz/Even discloses the method of claim 1, wherein the method is executed upon a client system (Franz et al: see column 4, lines 50-52 and Fig 1, item 110 – the entire process can be performed by the client device; the client device is considered to represent a *client system*).

Referring to claim 8, Franz/Even discloses the method of claim 1, wherein the method is executed upon a server (Franz et al: see column 4, lines 48-50 and Fig 1, item 130 – the server performs the process).

Referring to claim 10, Franz/Even discloses the method of claim 1, wherein the string is a search string (Franz et al: see column 5, lines 47-48 and 52-53 – the voice query is considered to represent a *search string*).

Referring to claim 11, Franz/Even discloses the method of claim 1, wherein the string is a search result string (Franz et al: see column 8, lines 32-43 – refining the search query is considered to represent using a result string to perform the search).

Referring to claim 12, Franz/Even discloses the method of claim 1, wherein the method steps are executed as program instruction embedded on a computer readable medium (Franz et al: see column 3, lines 52-59).

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,027,987 to Franz et al in view of US Patent No. 6,393,399 to Even as applied to claim 1 above, and further in view of the article "College Algebra Tutorial 57: Combinations" by WTAMU (hereafter WTAMU).

Referring to claim 9, Franz/Even discloses a method for providing at least one additional search term to the search process including limiting the total number of words to be included in a query (Franz et al: see column 6, lines 55-56). However, Franz/Even fails to explicitly teach the further limitation wherein the string includes N words, and wherein $(N-1)(N/2)$ additional search terms are provided to the search process.

WTAMU discloses a formula that provides the same results as the formula wherein the string includes N words, and wherein $(N-1)(N/2)$ additional search terms are provided to the search process (see page 2, line 4 – the formula for combinations). If the variable r is set to 2, then the formula for combinations provides the same result as the formula $(N-1)(N/2)$. For example, if $N=6$, then the formula for combinations yields $(6!/((6-2)!*2!)) = (6!/(4!2!)) = 15$ and the formula $(N-1)(N/2)$ yields $(6-1)(6/2) = (5)(3) = 15$. Also, if $N=7$, then the formula for combinations yields $(7!/((7-2)!*2!)) = (7!/(5!2!)) = 21$ and the formula $(N-1)(N/2)$ yields $(7-1)(7/2) = (6)(3.5) = 21$.

It would have been obvious to one of ordinary skill in the art to set the variable r equal to 2 in the formula for combinations in order to create a subset in the same manner as using an equation such as $(N-1)(N/2)$ to create a subset. One would have been motivated to do so in order to reduce long processing times that result from over-generating variants of a term.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use WTAMU's formula for combinations with the variable r equal to 2 to generate a subset as a method of calculating the parameter, the total number of words to be included in a query, disclosed by Franz et al. One would have been motivated to do so to create a voice interface that achieves high accuracy without having to require constant user input (Franz et al: see column 1, lines 27-44).

11. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,027,987 to Franz et al in view of US PGPub 2004/0205672 to Bates et al (hereafter Bates et al).

Referring to claim 17, Franz et al disclose a method for receiving a search query and then enhancing the query to provide additional terms to the search engine. In particular, Franz et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving a string that incorporates a plurality of characters separated by at least one space (see column 5, lines 52-53 and column 6, lines 28-29 – a voice query is considered to represent *a string that incorporates a plurality of characters*; in the example voice query "White House," the characters in the word "White" and the characters in the word "House" are *separated by at least one space*);

replacing said at least one space with a hyphen to form at least one additional term (see column 8, lines 51-61 – Franz et al disclose providing additional terms in the form of compound words); and

providing said at least one additional term to the search engine (see column 6, lines 62-66 and column 7, lines 58-61 – the hypothesis list is considered to represent the *additional terms*; the hypothesis list is utilized to construct the search query).

However, while Franz et al disclose the concept of using compound words to expand the search query, Franz et al fail to explicitly teach the limitation of replacing said at least one space with a hyphen to form at least one additional term. Bates et al discloses a method for determining variants of words (see abstract). In particular, Bates et al discloses the limitation of replacing said at least one space with a hyphen to form at least one additional term (see [0030], lines 8-9; [0095]; and Fig 9, item 220 – a variant of E mail is E-mail).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Bates et al's method of determining variants of compound words as a subcomponent to Franz et al's method for providing additional terms to a searching process. One would have been motivated to do so since Franz et al's method provides the capability of using compound words to perform or refine a search (Franz et al: see column 8, lines 51-53) and also since using compound words instead of each word separately increases the chances of providing better search results (Franz et al: see column 8, lines 53-57).

Referring to claim 18, the combination of Franz et al and Bates et al discloses the method of claim 17, wherein the method steps are executed as program instruction embedded on a computer readable medium (Franz et al: see column 3, lines 52-59).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent No. 5,418,948 to Turtle titled "Concept Matching of Natural Language with a Database of Document Concepts," which focuses on handling queries consisting of phrases and stopwords.
- US PGPub 2003/0097252 to Mackie titled "Method and Apparatus for Efficient Segmentation of Compound Words using Probabilistic Breakpoint Traversal," which focuses on segmenting compound words.
- US Patent No. 6,101,492 to Jacquemin et al titled "Methods and Apparatus for Information Indexing and Retrieval as well as Query Expansion using Morpho-Syntactic Analysis," which focuses on expanding queries.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimberly Lovel
Examiner
Art Unit 2167

kml
25 April 2006


JOHN R. COTTINGHAM
PRIMARY EXAMINER

